DRAGON EYE CONCEPT OF OPERATIONS DESCRIPTION

1.0 **OVERVIEW**

1.1 **PURPOSE**. The Dragon Eye is an airborne imagery sensor capability that will be employed at the battalion, company, or platoon level within the GCE. It will increase the employing unit's reconnaissance and surveillance (R&S) capability and aid in the observation of tactical objectives and danger areas beyond the unit's line of sight. It will do this by providing real time imagery information directly to operational elements down to the company/platoon level given the tactical situation.

This document provides the baseline concept description and system information required by tactical commanders, systems operators and potential developers to support concept exploration. It includes a program description; operational concepts; missions; manpower, personnel and training; and concepts for logistics support. Threshold (minimum acceptable) and objective (desired) performance parameters are not meant to be regarded as hard performance requirements as would be stated in an Operational Requirements Document (ORD), but have been provided in order to describe the expected Dragon Eye capability for the reader. Detailed technical, operational, performance, and logistics information will be provided in other documents as the program matures.

1.2 **BACKGROUND**. In March 1999, MarForPac issued a Fleet Operational Needs Statement (FONS) for a small unit remote scouting system (SURSS). Concept definition efforts identified SURSS as a possible family of sensors organic to the small unit. I-SURSS is an interim capability to be fielded until the full SURSS capability is realized. The Tactical Remote Sensor Suite (TRSS) ORD was subsequently modified to include I-SURSS. Dragon Eye is expected to fill the I-SURSS requirement and procurement/fielding is scheduled to begin in late FY02, or early FY03.

1.3 **I-SURSS CONCEPT/MISSION**. The I-SURSS is intended to provide the small unit with a simple, cost effective, airborne imagery sensor that will increase the employing unit's reconnaissance and surveillance capability. It will aid in the observation of tactical objectives and danger areas beyond the unit's line of sight. Its mission is to provide day and night point reconnaissance/surveillance directly to the small unit leader and aid in development of situational awareness and command and control of tactical operations. For the purposes of this document, point reconnaissance/surveillance is defined as the observation of a specific target or small area, implying that the I-SURSS is not meant to provide wide area search. I-SURSS will not provide precision targeting information.

2.0 **SYSTEM DESCRIPTION**.

The I-SURSS (Dragon Eye) will be a low cost (reusable but affordably expendable) airborne sensor employed at the small unit level. It will possess an interchangeable day or night imaging capability that will provide imagery to support combat decision making. Dragon Eye is

comprised of an imagery sensor payloads, sensor delivery system (air vehicle), ground control station with data-link, and associated logistics. The Dragon Eye will be a complete, lightweight, ready-to-use-as-delivered system with minimal logistics or expeditionary footprint, easy to operate and employ requiring little formal operator training.

2.1 **AIR VEHICLE**

2.1.1 **AIRFRAME**. The Dragon Eye will be a small air vehicle designed to be quickly assembled and readied for flight within five minutes. The vehicle will be hand-launchable. It will be rugged enough to survive recovery in unimproved areas such as an open field. The Dragon Eye will be capable of operating in fair weather (threshold) or light rain (objective).

2.1.2 **PROPULSION**. The Dragon Eye air vehicle will be electrically powered by batteries. The batteries will be rechargeable and/or disposable. Rechargeable batteries will used for training, disposable batteries will be used for real-world contingencies.

2.1.3 **AVIONICS**. The Dragon Eye will possess an autopilot capable of controlling the aircraft in autonomous (waypoint navigation without operator input): flight by controlling parameters such as airspeed, altitude, heading takeoff and landing. Waypoint navigation using GPS positioning information will normally be pre-programmed prior to flight; however, the Dragon Eye will also be capable of receiving and navigating to new waypoints up-linked during flight. The aircraft will have the capability to execute pre-programmed emergency flight profiles (hold at or return home to a point) in the event of loss of datalink due to failure or masking by terrain.

2.2 **PAYLOADS**. The Dragon Eye operator will carry the following payloads, each to be used individually during a mission flight: a day video color camera, a low light level (LLL) camera, and a an infrared (IR) sensor. These payloads will be modular and easily exchanged with a minimum of time and effort. The sensor will be fixed in position and focal length. The resolution of the video image will be sufficient to detect and classify vehicles and troops in formation (threshold) or identify a person carrying a weapon and the type of vehicle (objective).

2.3 **GROUND CONTROL STATION**. The ground control station (GCS) will be man portable and consist of the command and control datalink receiver/transmitter processor, a video/map display, data-link antenna, a power source, and support equipment . The Dragon Eye GCS will use DC electrical power provided by using batteries already in the supply system. The team, using the GCS, will be able to monitor the vehicle's position and status, control its movement, and view the imagery. The image display will include a directional reference (i.e. north seeking arrow) and a six-digit grid reference correlated to the aircraft's position.

2.4 **DATALINK**. The Dragon Eye data-link will provide for the control of the air vehicle (uplink) and reception of video and telemetry (downlink). The datalink will be designed to allow the simultaneous operation of more than one air vehicle and GCS within close proximity, and for the sequential control of more than one air vehicle from a single GCS. The specific frequencies, band, bit stream, and protocols will be resolved as the program matures. The signals from the air vehicle and ground station will be broadcast omni-directionally and subject to interception. The

Dragon Eye data-link(s) will use commercial best practices to ensure the security and reliability of the links in a high EMI environment. The use of NSA approved Cryptologic equipment is not required.

2.5 **SUPPORT EQUIPMENT**. The Dragon Eye team will carry basic repair kits consisting of spare parts and basic maintenance/troubleshooting equipment. The Dragon Eye will not require special tools and will be designed for easy maintenance in the field.

2.6 **FOOTPRINT**. The Dragon Eye will be transportable to the field by back-pack (MOLLE). Equipment sufficient to conduct a limited number of flights (2 air vehicles, 1 GCS, batteries and ancillary equipment) will be man-packable and distributed among the Dragon Eye team personnel. Three Marines will be required to transport and operate a two aircraft system.

2.7 **NOTIONAL PERFORMANCE**

2.7.1 **AIRSPEED**. The Dragon Eye will be capable of sustaining at least 35mph. This is a minimum airspeed derived from expected wind, responsiveness, and convoy speed.

2.7.2 **COMBAT RADIUS**. The Dragon Eye will have a combat radius of 5km (threshold) to 10km (objective) from the controlling station. Although the air vehicle's actual range may be greater, the limitations of the data link and other operational considerations such as team location and time to fly to target may determine the effective range.

2.7.3 **ENDURANCE.** The Dragon Eye will have an endurance of .5 hours (rechargeable battery/threshold) to 1 hour (disposable battery/objective) depending on batteries used.

2.7.3 **ALTITUDE**. The Dragon Eye will typically fly 300-500 feet above the ground.

2.7.4 **WEIGHT**. The Dragon Eye air vehicle will be light enough to be hand launched or launched with a minimum of supporting equipment (a small bungee cord, for example).

2.8.5 **DATALINK**. The range of the Dragon Eye data link may be less than the range of the air vehicle, depending on transmitter power, line of site considerations, etc. However, it is possible to program the vehicle to fly autonomously (without datalink) to a location where another GCS is within range of the link and can either take control of the vehicle (GCS) or receive the imagery only. It is therefore possible to "pass" the Dragon Eye forward if necessary in order to extend its effective range if needed.

3.0 **CONCEPT OF OPERATIONS.** To aid in the Dragon Eye concept evaluation, recommendations for team size, employment, tasking, etc., are provided in paragraph 3.1 below. After initial evaluation, unit commanders may deviate from the recommendations as they desire.

3.1 **ORGANIZATION.**

3.1.1 **SYSTEM LOCATION/DISTRIBUTION**. The Dragon Eye will be organic to the battalion and operated at the company level under the cognizance of the Company or a Platoon

Commander. The specific organizations and numbers for distribution are TBD, however notionally, there will be 5 systems per battalion. A notional system is defined in Appendix A.

3.1.2 **PERSONNEL REQUIREMENTS**. Dragon Eye operation will be assigned as an additional duty for existing personnel within each unit. Nine operators, forming three teams, one from each platoon, will be required from each infantry company. The operators of a single team will be of the 0311 MOS and should all be from the same fire team. Training is discussed in paragraph 3.5. A Dragon Eye team will consist of three Marines who have received the appropriate training. These Marines will be sourced from within the company's platoons and employed as needed. Commanders must anticipate the effect Dragon Eye duty will have on these Marines' primary duty.

3.1.3 **ORGANIZATIONAL STRUCTURE REQUIREMENTS**. Dragon Eye will be supported within the force structure of the existing organizations. Dragon Eye will be an additional duty for personnel identified in the paragraph above.

3.2 **MISSIONS**. The Dragon Eye will provide point reconnaissance/surveillance to the supported unit. The typical missions discussed below are basic and non-inclusive -- commanders will employ with the system to meet their particular requirements.

3.2.1 **Ground Combat Element**

- Reconnaissance & Surveillance. The Dragon Eye can be used before, during and after an operation to obtain information on the objective, route of movement and disposition of forces, to maintain control of friendly units, and to obtain battle damage assessments. In a defensive mode, Dragon Eye can observe likely avenues of approach and augment observation posts. The Dragon Eye can also be used to provide defensive assessments on the unit's camouflage and concealment.

- Patrolling. The Dragon Eye can be used during patrolling, when the potential for enemy contact is high, to increase the patrol's area of coverage and to provide additional security for the patrolling force.

- Military Operations in Urban Terrain (MOUT). The Dragon Eye can provide "over-the-next-building" information to units engaged in an urban environment. Because of the typically compressed battle space in these operations, the Dragon Eye should be able to provide longer loiter times due to the decreased range requirement.

3.3 **TASKING**. Dragon Eye will be a Company Commander's asset, his to assign as needed in support of the scheme of maneuver. The teams can be held in General Support (GS) of the Company, or assigned in Direct Support (DS) to subordinate commands. Because Dragon Eye is an airborne platform Dragon Eye operations will require a "request for flight" by contacting the Company FAC, or the Battalion Air Officer, when the airspace issues require coordination due to the presence of other air assets. These Dragon Eye requests will be prioritized and approved accordingly based on the air situation. When the teams are DS to a specific unit they will locate themselves where they can best accomplish the missions assigned and communicate with the

supported unit's Command Element. Dragon Eye missions fall into the following two basic categories:

- Preplanned. Preplanned Dragon Eye missions are those missions assigned to the teams in advance and allowing sufficient time to fully plan, and coordinate issues with higher headquarters to include airspace issues, routes, and targets prior to takeoff. Dragon Eye teams may be tasked with preplanned missions while in either GS and DS roles.

- Immediate. Immediate missions are those missions not assigned to the teams with sufficient time to conduct detailed mission planning prior to the requirement for the mission presenting itself. Many times these types of taskings will be in response to unforeseen changes in the tactical scenario. Requests for immediate Dragon Eye support are passed directly, via the fastest means, to the Company FAC, or Battalion Air Officer for flight approval. A vehicle that is currently performing a mission can be diverted, by a competent authority, or another vehicle can be launched from a "stand-by" status, in response to immediate tasking.

3.4 **MISSION PLANNING**. Just as with any other mission, Dragon Eye mission planners must consider METT-TSL when deciding the best way to employ the system. Additionally, planners must consider RF signature, frequency deconfliction, and aviation related issues, such as airspace coordination/deconfliction, route planning, terrain clearance, distance to fly vs. battery power available and line-of-sight connectivity.

3.4.1 **SYSTEM CONSIDERATIONS**

- Weather. The Dragon Eye is meant to be fair weather (threshold) or light rain (objective) capable. Its small size and other factors limit its ability to provide useful information during extreme weather conditions such as high winds, heavy fog, heavy precipitation, etc.

- RF Signature. Both the ground station (when changing flight routes while Dragon Eye is airborne) and the air vehicle will emit an omni-directional RF signal which is subject to Information Warfare (IW) and Electronic Warfare (EW) by opposing forces and may compromise the unit's position.

- Line of Sight Considerations. Both the vehicle control link (uplink) and the imagery link (downlink) are line-of-sight frequencies. In general, the further the distance from the transmitter, the higher the vehicle must fly in order to maintain line of sight. Higher vehicle altitudes effect the amount of detail discernable in the imagery. Terrain elevations must also be considered. For example, a piece of high terrain between the objective and the ground station will require the Dragon Eye to fly at a higher altitude over the objective than flat terrain. It is possible for one receiver to be within line of sight of the air vehicle while others are not and it is possible to "pass" the Dragon Eye forward if necessary in order to extend its effective reception range. These factors must be carefully considered during mission planning to provide for effective control of the air vehicle and effective information dissemination.

- Route Planning. The Dragon Eye, with an integral GPS receiver providing accurate position data, will be capable of preprogrammed waypoint navigation as its primary method of flight to and from the target area In order to maximize the time on station, the route to and from the target should be as direct as possible while still considering the threat. A less-than-direct route reduces the time on station over the actual target. These factors must be weighed against each other when planning the route the vehicle will take to the objective.

- Frequency Deconfliction. The air vehicles and ground control stations will broadcast their signals omni-directionally. If two or more systems are operating simultaneously, they will require the use of multiple frequencies or an air vehicle discreet addressing capability in order to avoid cross-control or interference. Systems may be set up to avoid conflicts by assigning each team an exclusive frequency for their air vehicle and GCS. Mission planners must deconflict data-link frequencies and address data-link usage within the battalion as well as other Dragon Eye equipped units in the area.

3.4.2 **THREAT**. Dragon Eye will encounter the same general threat of the unit which it is supporting and will therefore operate in high-threat, close-combat areas. It will be subject to enemy air defenses from small arms and other direct fire systems. Surface-to-air missiles will not be a consideration due to the UAV system's small radar/heat signature, and relatively low value as a target. Future threats of counter-UAV technology and directed energy weapons may be applicable. The ground control or display systems will be subject to the same threat as the unit supported. Transmission links may be subject to enemy Information Warfare and Electronic Warfare. The system's payloads (cameras) may be subject to deception through camouflage, cover, and concealment.

3.4.3 **COMMAND AND CONTROL**. The Dragon Eye will be employed in accordance with the unit's SOP. This document provides examples of how the Dragon Eye system may be employed only to demonstrate initial concepts:

Dragon Eye operates in airspace normally associated with low flying manned aircraft and therefore all employment must be coordinated with the Battalion Air Officer. Dragon Eye team(s) should be collocated, either physically or electronically, with the Forward Air Controller (FAC) and his Tactical Air Control Party (TACP) personnel. While in direct support of a company, the teams will receive tasking from the Company Commander directly or via the TACP. When tasked with an immediate mission, the Dragon Eye teams will work with the TACP to coordinate flight routing and deconflict airspace. The FAC will coordinate with the Air Officer in the COC to deconflict airspace. When in general support of the Battalion, the team will receive tasking through the Air Officer in the COC. By definition, pre-planned missions should already be coordinated and will not require the same amount of communication as immediate missions. Immediate mission coordination will include, at a minimum, approval for flight by the Air Officer, notification to the Air Officer of launch, the Dragon Eye flight route, target coordinates, time on and off station, and recovery.

3.4.4 **AIRSPACE COORDINATION**. The battalion Air Officer will be responsible for the coordination of airspace where the Dragon Eye will be employed in order to provide safe separation of the Dragon Eye and other airborne assets. Pre-planned Dragon Eye flights should

be listed on the Air Tasking Order, or as a minimum special instructions (SPINS) should be included on the Air Tasking Order (ATO) to ensure all aircrews are aware that the battalion possesses Dragon Eye capability. Since most Dragon Eye missions will take place in a small area, it should not be necessary for the Battalion Air Officer to contact the Direct Air Support Center (DASC), or the controlling agency providing DASC functions, via doctrinal nets to notify them of Dragon Eye operations. As manned aircraft contact the Air Officer and/or the FACs for control and coordination in the battalion's airspace, the pilots will be briefed on the Dragon Eye mission profile parameters by the FAC.

3.4.5 **COMMUNICATIONS**. The supported unit will use battalion tactical nets to task the Dragon Eye team. The TACP net will be used to coordinate airspace and will be used by the team/FAC to provide mission information such as launch and recovery notification. Should the team not be co-located with the FAC, or at least near a TACP radio, the Dragon Eye team will require their own radio capable of broadcasting on the TACP net.

3.4.6 **INFORMATION DISSEMINATION**. Mission planning should include planning for the dissemination of Dragon Eye gathered information. The Dragon Eye is meant to provide imagery directly to the warfighter as needed; however, Dragon Eye broadcasts an omni-directional video signal and anyone with an appropriate receiver in line of sight can view the video. When located with the supported unit, the Dragon Eye team will provide this video to the commander. When not located with the supported unit, the Dragon Eye team can conduct the mission and the supported commander could receive the video directly from an alternate GCS, or receive a SALUTE report via radio from the Dragon Eye team if the supported commander is not within line of sight of the air vehicle. The Dragon Eye ground control station will possess a small video storage/frame grab capability so that the product may be viewed after the mission. Ideally, these images could be saved as a "frame" in a JPEG file on the GCS hard drive, beamed to a modem connected to a SINGARS radio, and then transmitted to higher headquarters.

3.5 **TRAINING**.

3.5.1 **NEW SKILLS/ TRAINING REQUIREMENTS**. Dragon Eye operation will require new skills training in the areas of system specific operation and maintenance. Initial skills training will be provided through an approved curriculum which should include, at a minimum, map reading, mission planning, GCS software/hardware knowledge, basic airspace deconfliction procedures, principles of aerial video imagery interpretation, aircraft system operation and system maintenance. Additionally, unit commanders and staff personnel will require systems capability and employment training.

3.5.2 **TRAINING METHODS AND LOCATION**. New equipment training will be required. It is anticipated that system training will be provided initially by a Dragon Eye UAV Mobile Training Team (MTT). Later, Division schools could conduct a 5 - 10 day course for those Marines designated to be Dragon Eye team members. The initial curriculum will be derived from the MTT course. Training will be comprised of classroom instruction and training aids interface, culminating in practical application with a working system. Proficiency training will be conducted by the unit. Eventually, a short familiarization class could be conducted at the School of Infantry (SOI), although this training would not be intended to be all encompassing.

3.6 **MAINTENANCE**. The Dragon Eye team will conduct minor operator level maintenance in both garrison and in the field. Operator level maintenance will consist of replacing snap-in modules and assemblies, and patching the air vehicle. The Dragon Eye will require no special tools. Criteria will be established as to when an air vehicle is to be repaired by operators, or returned to the contractor facility for refurbishment. There is no intention of requiring investigations for damaged or lost air vehicles as long as there does not appear to be negligence or willful misconduct on the part of the operator. There will be no intermediate or depot level maintenance. Replacement modules and assemblies for operator level maintenance will be re-supplied via normal supply procedures that are in place for other unit equipment.

3.7 **LOGISTICS**. The entire Dragon Eye load-out will be transportable to the field by back-pack(MOLLE). Even though a Dragon Eye System will be comprised of six aircraft for every one GCS, Marines will generally take only the number of aircraft sufficient to conduct the number of flights required for the unit's mission, (perhaps 2 air vehicles, 1 GCS, spare batteries and ancillary equipment); capable of being carried outside the team's MOLLE packs without serious degradation of the performance of their normal duties. Replacement parts and equipment will be re-supplied via the normal re-supply procedures in place for other unit equipment.

3.8 **SAFETY**. Specific system safety concerns will be addressed upon further system definition, however it is anticipated that safety concerns will include, at a minimum, propeller hazards, impact injuries from a flying aircraft, and the handling/storage of batteries.

3.9 **SAMPLE SCENARIOS**. These scenarios combine the concepts described above.

3.9.1 Direct Support (Dragon Eye Team Not Co-located with Unit). Alpha Company has been tasked with the immediate seizure of a small warehouse believed to contain a cache of weapons. Due to the lack of time and the potential of the mission being compromised, the Battalion Commander chooses not to use a Recon Team to physically observe the target prior to Company movement. The objective is approximately 5 km from the company's current position and 6 km from the COC. The Battalion Commander has assigned the Dragon Eye in general support and the team has displaced to a hill 100m from the COC. As Alpha Company moves towards their objective, the Company Commander requests an immediate Dragon Eye support through the FAC who contacts the Air Officer, calling in a pre-formatted request over the TACP net. The team is assigned in direct support of Alpha Company. The request is relayed to the Dragon Eye team who begin checking the system and programming waypoints. The AO redirects other air assets in the area to deconflict the airspace. The team launches the air vehicle which climbs to an altitude of 500 feet and begins to auto-navigate to the objective. The Alpha Company Commander views a GCS located with his company by switching it to the vehicle's downlink frequency. The Dragon Eye team radios him over the company TAC net that they are approaching the objective. The commander watches his receiver as the vehicle begins to orbit over the warehouse. When presented with a good image, the commander captures that frame by selecting an option on the GCS. He'll use this to show his platoon leaders an up-to-date picture of the objective to increase their situational awareness. The imagery shows there are three GS commercial trucks parked behind the warehouse and two people standing watch on the roof. They do not appear to be holding rifles. After orbiting for 15 minutes with no change, the

Dragon Eye team recovers the aircraft and immediately launches another mission to coincide with Alpha Company's assault. The commander begins his company's movement towards the objective and tells the Dragon Eye team to observe an intersection 200 meters north of the objective as long as possible to provide warning over the radio of any vehicles advancing toward the objective. The Dragon Eye team establishes an orbit and immediately sees a stake-bed truck with personnel on board speeding towards the objective. The team radios the commander who takes action to cut off the truck before it can deliver reinforcement.

3.9.2 Direct Support (Dragon Eye Team Co-located with Unit). Bravo Company is operating in the streets of a suburban area comprised of 1-2 story buildings. Their mission is to conduct patrols to locate and observe groups of armed personnel within the city. Rules of engagement limit their actions to observation only. Upon reaching an open intersection, the Company Commander is concerned that there are signs of increased activity at the intersection five blocks ahead. The Dragon Eye team, attached in direct support of the company, is called forward to launch an air vehicle and observe the area around the intersection in question. As the team assembles the air vehicle and readies the ground station, the Company FAC calls into the AO over the TACP net to begin the airspace coordination. The Dragon Eye team programs the system with 3 waypoints, forming a triangle over the area of interest. Within 10 minutes of receiving the order, the team starts the vehicle, performs final checks, and launches the Dragon Eye into the air, allowing it to climb straight ahead until it gains enough altitude to avoid the buildings and power lines. The vehicle climbs to an altitude of 500 feet above the ground and begins to fly waypoint to waypoint, forming an orbit over the area. The Company Commander, assisted by the team, watches the imagery on the ground station. As the objective comes into the field of view, the team spots a crowd of about 20 people milling around two vehicles parked in an alley between buildings. The imagery shows that one of the vehicles is a military style vehicle and some of the people are carrying weapons. As the commander radios the situation to the COC, the Dragon Eye team continues to observe the area. The Company Commander observes the group until a decision is made for the company to displace to another location. After half an hour of flight time, the team recovers the air vehicle by landing it in the street at the intersection and calls the AO over the TACP net to tell him the airspace is clear. They quickly pack the gear and displace with the company.

3.9.3 General Support. The battalion is in a static position during an defensive operation and two Dragon Eye teams are in general support of the battalion. An observation post has been established and radios in a report that they can hear what appears to be loud engine noise 1 km down a road from their position, but a hill is blocking their view. The Bn C.O. orders the launch of a Dragon Eye to observe the activity. The Dragon Eye team programs the coordinates of the activity into the system and launches the air vehicle, which proceeds directly to the target. As the air vehicle passes overhead, the Bn Commander observes the video imagery showing a group of 3 personnel standing around a large vehicle on the other side of the hill. The Bn C.O. orders a patrol to investigate. The two Dragon Eye teams take turns continuing to launch and recover air vehicles for the next 2 hours -- a total of three sorties, at one each 45 minutes, to monitor the target as the patrol captures the group and takes them prisoner.

Annex A

NOTIONAL SYSTEM PERFORMANCE

AIRSPEED. The Dragon Eye will be capable of sustaining at least 35mph. This is a minimum airspeed derived from expected wind, responsiveness, and convoy speed.

COMBAT RADIUS. The Dragon Eye will have a combat radius of 5km (threshold) to 10km (objective) from the controlling station. Although the air vehicle's actual range may be greater, the limitations of the data link and other operational considerations such as team location and time to fly to target may determine the effective range.

ENDURANCE. The Dragon Eye will have an endurance of .5 hours (rechargeable battery/threshold) to 1 hour (disposable battery/objective) depending on batteries used.

ALTITUDE. The Dragon Eye will typically fly 300-500 feet above the ground.

WEIGHT. The Dragon Eye air vehicle will be light enough to be hand launched or launched with a minimum of supporting equipment (a small bungee cord, for example).

DATALINK. The range of the Dragon Eye data link may be less than the range of the air vehicle, depending on line of site considerations, etc. However, it is possible to program the vehicle to fly autonomously (without data-link) to a location where another GCS is within range of the link and can either take control of the vehicle (GCS) or receive the imagery only. It is therefore possible to "pass" the Dragon Eye forward if necessary in order to extend its effective range if needed.

NOTIONAL SYSTEM (5 systems per battalion)

6 Air Vehicles per system

1 Ground Station w/antenna per system

1 day color EO payload

1 day lowlight black and white EO payload

1 IR payload (may not be available in early FY03)

18 modified MOLLE back-packs

6 hard-case embarkation containers

18 aircraft batteries, (mix of rechargeable and non-rechargeable)

Spare Parts

Repair kit